

# **Future Perchlorate Treatment Studies**

**Frank J. Blaha, P.E.**

**AWWA Research Foundation**

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# Organizational Background

- American Water Works Association Research Foundation
- In existence since 1965
- Most active since about 1984
- AWWARF Charter
- Related to but separate from AWWA
- AWWA created in 1881
- AWWA Charter
- Perchlorate brought to Foundation's attention in June 1997
- California water utilities concerned about impact
- AWWARF BOT approved limited involvement in June 1997



# Treatment Project Background

- Variety of treatment methods needed
- Address concentrations in utility source waters
- Treat to less than detection limit/4 PPB



# Perchlorate Research Program

- Most of 1998 work will be funded from a \$2,000,000 Congressional earmark
- Congressman Jerry Lewis of California was the champion for obtaining this earmark
- Earmark for treatment-related research
- Funding to go to East Valley Water District (EVWD)
- EVWD in turn working with AWWARF to manage the research



# **EVWD/AWWARF Issue Group Meeting**

- Held in anticipation of the Congressional earmark
- Held in fall of 1997, in Ontario, California
- Issue Group: Workshop to Develop a Multiyear Research Plan
- Focused on treatment and analytical methodology research needs
- Funded by
  - ◆ EVWD
  - ◆ Main San Gabriel Basin Watermaster
  - ◆ Metropolitan Water District of Southern California
  - ◆ San Bernardino Valley Municipal Water District
  - ◆ Southern Nevada Water Authority



# EVWD/AWWARF

## Issue Group Meeting, *continued*

- Twenty-seven participants
  - ◆ Stakeholders
  - ◆ Experts in potential treatment technologies
  - ◆ Experts in analytical issues for perchlorate
- Addressed status of the problem, discussed issues
- Identified relevant research needs
- Broke up into small working groups to define individual projects



# *Planned 1998 Activities and Schedule*

## ■ Five treatment-related projects moving forward

- ◆ Application of Bioreactor Systems to Low-Concentration Perchlorate Contaminated Water
- ◆ Treatability of Perchlorate-Containing Waters by Reverse Osmosis and Nanofiltration
- ◆ Treatability of Perchlorate Using Ion Exchange Technology
- ◆ Removal of Perchlorate and Bromate in Conventional Ozone/GAC Systems
- ◆ Investigation of Methods for Perchlorate Destruction in Aqueous Waste Streams



## ***Planned 1998 Activities and Schedule, continued***

- ◆ **Two analytically-related projects advertised**
  - ➔ **Survey the Performance of the California DHS (Ion Chromatography) Analytical Protocol**
  - ➔ **Short Term Perchlorate Laboratory Issues**
  - ➔ **No proposals received**





## ***Planned 1998 Activities and Schedule, continued***

- ◆ Treatment projects have Phased scope
- ◆ Intent for realistic/applied projects
- ◆ Known conditions
- ◆ Phase 1: Laboratory/Bench scale
- ◆ Phase 2: Pilot scale
- ◆ General Phase 2 work in proposals
- ◆ Pilot scale specifics identified end Phase I
- ◆ Phase 2 on Crafton-Redlands Plume - Terms of Congressional earmark



## ***Planned 1998 Activities and Schedule, continued***

- ◆ **Winning proposal by mid-June**
- ◆ **Contracts completed 4 to 8 weeks after mid-June**
- ◆ **Probably August/September before work**
- ◆ **Timetable contingent on EPA grant released to EVWD**
- ◆ **Many responding teams include both universities and consulting firms**



# **AWWARF Process**

- During project period the investigator makes periodic reports of project progress to AWWARF and the Project Advisory Committee (PAC)
- PAC identified for all projects
- PACs are volunteer technical expert reviewers
- The PAC provides ongoing peer review on a project from drafting of the RFP through the final report
- Perchlorate treatment projects will also be peer reviewed by EVWD

